# Chapter 26 Puzzles (pg138-139)

# Answers to follow next week

Monday complete Q's 1-4 pg138

Important Notes:

- For Question 1 – Remember BOMDAS (Brackets, then order, then multiplication and division, then addition and subtraction)
- For Question 2 – Remember Area = length x width
- For Question 3 – Remember length x width = Area
- Question 4 is for 6th class only

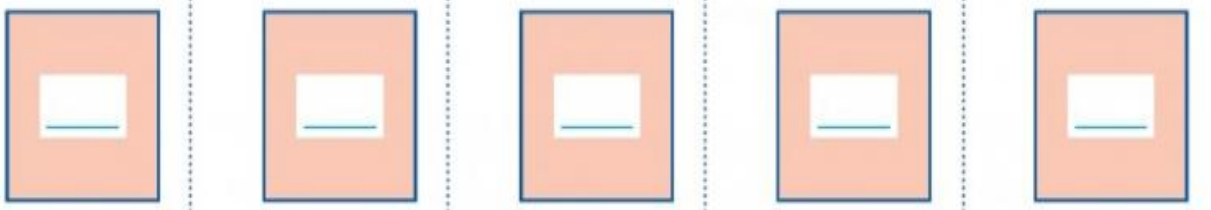
## Chapter 26: Puzzles 1

1. Write the missing operation signs to make each of the following true.

(a) 57 ◯ (16 ◯ 5) = 137 | (b) (29 ◯ 8) ◯ 17 = 215

2. Find the area of each square in square centimetres ($cm^2$).

(a) ← 5cm → | (b) ← 7cm → | (c) ← 9cm → | (d) ← 6cm → | (e) ← 11cm →



3. Now find the length of each side of these squares.

(a) ← ___ → | (b) ← ___ → | (c) ← ___ → | (d) ← ___ → | (e) ← ___ →


4. Write the answers to these questions.

(a) $2 \times 2 \times 2 =$ ____ (b) $3 \times 3 \times 3 =$ ____ (c) $4 \times 4 \times 4 =$ ____

We could have asked the questions like this: $2^3 =$ ____, $3^3 =$ ____, $4^3 =$ ____.

(d) $5^3 =$ ____ | (e) $6^3 =$ ____ | (f) $7^3 =$ ____ | (g) $8^3 =$ ____ | (h) $9^3 =$ ____ | (i) $10^3 =$ ____

# Tuesday complete Q's 5-7 pg138

Important Notes:

- Question 5 is for 6th class only
- For Question 7 – Use the explanation below to help

**Using ratios**

Ann shared a bag of dog food between her labrador and her poodle in the ratio 3:1.
If she had a 1kg bag, how much did each dog get?

The ratio is 3:1. The labrador got 3 of every 4 parts, while the poodle got 1 of every 4 parts.
Another way of saying this is that the labrador got $\frac{3}{4}$ and the poodle got $\frac{1}{4}$.
Out of a 1kg bag, the labrador got $\frac{3}{4}$ (750g) and the poodle got $\frac{1}{4}$ (250g).

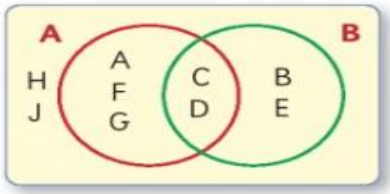
- Turn each ratio into a fraction by adding each part of the ratio. E.g.
  Share €150 equally between Séan, Pat and Niamh in the ratio 5:3:2
  Step 1 - Add the ratios - (5+3+2=10)
  Step 2 – Change each ratio to a fraction
  Pat = $\frac{5}{10}$ , Séan = $\frac{3}{10}$ , Niamh = $\frac{2}{10}$

  Step 3 – Work out each fractional amount
  So... Pat's $\frac{5}{10}$ = €75 , Séan's $\frac{3}{10}$ = €45 and Niamh's $\frac{2}{10}$ = €30
- Have a go at the Challenge – Answers to follow next week

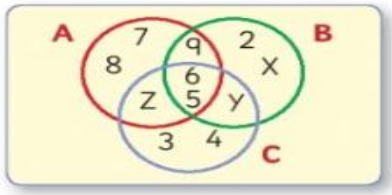
**5.** Now try these.

(a) $2^4$ | (b) $3^4$ | (c) $5^4$ | (d) $6^4$ | (e) $10^4$ | (f) $2^5$ | (g) $3^5$ | (h) $10^5$

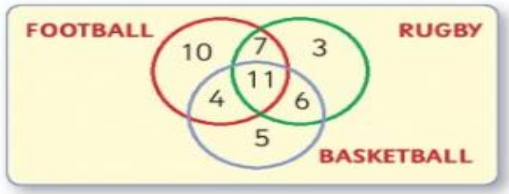
**6**




Write the letters that are in:
(i) circle **A**
(ii) circle **B**
(iii) both circles
(iv) circle **A** only
(v) circle **B** only
(vi) no circle




Write the digits/letters in:
(i) circle **A**
(ii) circle **B**
(iii) circle **C**
(iv) all 3 circles
(v) **A** and **B** but not in **C**
(vi) **B** and **C** but not in **A**




Sports liked by a class:
(i) all 3 sports
(ii) football
(iii) rugby
(iv) basketball
(v) 1 sport only
(vi) at least 2 sports

**7.** A prize was shared between Zach, Zoe and Zeth in the ratio 11:8:7. If Zoe got €384.
How much did (i) Zach and (ii) Zeth get?

***Challenge*** If Audrey gave two of her books to Ben, they would then have the same number of books each. If Ben had given two of his books to Audrey, she would have had nine times as many as him. What is the least number of books each could have?

# Wednesday complete Q's 1-3 pg139

Important Notes:

- For Question 1 - A magic square is magic, because the numbers of each row, each column and both diagonals always give the same result when added together.
- So for 1a the magic number can only be figured out by adding the diagonal marked. The magic number is 17+12+7+2=38. Now make every other row, column and diagonal add up to 38.
- Note: The magic number for parts b and c are different!
- For Question 3 – Try to solve these without using a calculator but if you are stuck you could use one to help you solve them.

## Puzzles 2

**1.** Complete these magic squares. Write the **magic number**. All rows, columns and diagonals must add up to the same number.

(a)

| | | | |
|---|---|---|---|
| 17 | | 4 | 14 |
| | 12 | | 9 |
| | 8 | 7 | |
| 5 | | | 2 |

(b)

| | | | |
|---|---|---|---|
| 16 | | 15 | |
| 6 | 13 | 9 | 18 |
| | 14 | 10 | |
| 19 | | | |

(c)

| | | | | |
|---|---|---|---|---|
| | 11 | 5 | 24 | 18 |
| 19 | | 7 | | |
| 26 | 20 | 14 | 8 | 2 |
| 3 | 22 | | | 9 |
| 10 | | | 17 | 16 |

**2.** Jeremy gave one-third of his chestnuts to Leo. Leo gave half of the chestnuts he got from Jeremy to Victoria. Victoria kept nine of the chestnuts and gave seven to Lucy. How many chestnuts had Jeremy in the beginning?

**3.** Write the missing numbers:

(a) ____ × 9 + 14 = 797

(b) ____ × 7 – 19 = 457

(c) ____ × 8 – 55 = 385

(d) ____ ÷ 4 + 17 = 41

(e) ____ ÷ 7 – 18 = 75.

(f) ____ ÷ 5 + 925 = 941

Thursday complete Q's 4 and 5a on pg13
Friday complete Q's 5b and 6 on pg13

**4.** What number am I?

I am a four-digit number. My first digit is a square number. My last digit is five less than my first. My second digit is half my last digit. My third digit is three times my second digit.


I am _____

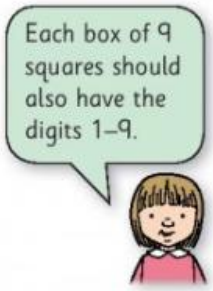
**5.** Complete the Sudoku puzzles. Each row and column must have the digits 1 to 9.

(a)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 4 | 5 | | 9 | 7 | | 6 |
| 6 | | 2 | | 3 | | 4 | 9 | 8 |
| | 7 | 3 | | 6 | 4 | | | |
| 7 | | | 1 | 8 | 5 | 3 | 6 | 2 |
| 5 | 6 | | | 7 | 2 | | | 4 |
| 3 | | 8 | 9 | | 6 | 5 | 7 | 1 |
| | 9 | 7 | 2 | 5 | | | 4 | 3 |
| 4 | | | | 1 | | 8 | | |
| 2 | | 6 | 4 | 9 | 3 | | 5 | |

(b)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 9 | | 8 | 6 | | 3 | | 2 | 5 |
| 5 | 3 | | 4 | | | 1 | 6 | 7 |
| | 4 | 1 | | 5 | 2 | | 8 | |
| 3 | 2 | | | 7 | 5 | | 4 | 1 |
| 7 | | 9 | 3 | | 1 | | | 6 |
| | 5 | 4 | 2 | 8 | | 3 | | 9 |
| 2 | 1 | 3 | | | 4 | 7 | 9 | 8 |
| | 6 | 7 | 8 | | 9 | | | |
| 8 | | 5 | 1 | | 7 | | 3 | 4 |




**6.** Can you fit these numbers across or down on the grid?

| 5 digits | 4 digits | 3 digits | 2 digits |
|---|---|---|---|
| 25937 | 3296 | 167 | 42 |
| 46819 | 9275 | 436 | 19 |
| | 5468 | 683 | 13 |
| | 7243 | 293 | 96 |
| | 6384 | 985 | |